

# SUCCESSFUL MANAGEMENT OF GINGIVAL RECESSION ASSOCIATED WITH ROOT CARIES AND NON CARIOUS CERVICAL LESION USING SUB EPITHELIAL CONNECTIVE TISSUE GRAFT : A CASE REPORT

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## ABSTRACT

Gingival recession is one of the most common manifestations of periodontal disease. The exposed cementum may be affected with carious and non-carious cervical lesions. Only restorative approach to treat these lesions to establish esthetics and function may not be sufficient. This paper presents gingival recession associated with carious and NCCL, successfully managed by soft tissue grafting (sub-epithelial connective tissue graft), resin-modified glass ionomer cement and composite restoration with stable results for a follow up period of 6 months.

**Key words:** Sub epithelial connective tissue graft, caries, non carious cervical lesion, periodontics-restorative interrelationship.

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## INTRODUCTION

Denuded root surfaces as a result of gingival recession are one of the most common manifestations of periodontal disease.<sup>1</sup> The causes of gingival recession are multifactorial, with poor oral hygiene, faulty tooth brushing, thin labial bone/ bony dehiscence, labially proclined teeth, orthodontic tooth movement being some of its etiologic and/or predisposing factors. The exposed cementum as a result of gingival recession most commonly leads to hypersensitivity, cervical abrasion, root caries and impaired esthetics.

Cariou and non-cariou cervical lesions (NCCL) are commonly associated with gingival recession and/or inadequate width of keratinised gingiva. The conventional treatment of following only restorative approach to treat these lesions may not be sufficient.<sup>2</sup> Therapy should also be aimed to increase the dimension of keratinised tissue to prevent or halt recession, which improves patient's ability to maintain plaque control.

Various techniques to treat gingival recession are free gingival grafts, sub epithelial connective tissue grafts, lateral pedicle grafts, use of soft tissue replacements such a cellular dermal matrix, collagen membrane and amniotic membrane.<sup>3,4,5</sup> Sub epithelial connective tissue graft, till date remains one of the most predictable procedures to increase the width of keratinised gingiva as well as treat gingival recession, with superior esthetic results.<sup>6</sup>

This case report presents the successful management of gingival recession associated with root caries and cervical abrasion using sub epithelial connective tissue graft, along with resin modified glass ionomer cement and composite restoration.

## CASE REPORT

A 28 year old systemically healthy, male patient reported to the outpatient department of SCB dental college and hospital, Cuttack, Odisha, with a chief complaint of sensitivity with respect to lower left back tooth region. The patient had no history of tobacco chewing or smoking. The oral hygiene status was fair.

On clinical examination tooth #33 and #34 were associated with Miller's class 1 gingival recession (fig 1). In addition, #33 was affected with cervical abrasion, while #34 was presented with cervical caries extending beyond cement-enamel junction. Both the teeth showed signs of dentinal hypersensitivity. Clinical probing measurements were as reported in table 1. Also, there was bleeding on probing with respect to the affected quadrant. Pulp vitality using electric pulp tester revealed that both teeth were vital.

Treatment goals for patient were to restore the lost soft tissue as well as the tooth architecture using root coverage surgery and cervical restoration respectively. Written informed consent was obtained from patient. Phase I therapy included scaling, root planning, patient education and motivation to maintain his oral hygiene. Two weeks after phase I therapy, when the area was free of gingival inflammation, the surgical and simultaneous restorative phases were planned.

### Surgical procedure

The recipient site was anaesthetised for the soft tissue grafting procedure and tooth #33 and #34 were outlined to receive sub epithelial connective tissue graft. Two vertical incisions on either side of the involved teeth including whole of the adjacent papilla were given and

Clinical parameter	#33		#34	
	Preoperative	Postoperative	Preoperative	Postoperative
Probing depth	2mm	1mm	1mm	1mm
Recession depth	2mm	0	2.5 mm	0
Recession width	3.5 mm	0	3 mm	0
Keratinised gingiva width	2mm	3mm	1mm	3mm
Keratinised gingiva thickness	1 mm	2mm	1 mm	2mm

extended apically beyond the mucogingival junction. The two vertical incisions were joined by a sulcular incision involving the papillae. Full thickness flap to expose the apical extent of caries, followed by a partial thickness flap beyond the mucogingival junction was reflected (fig 2). The carious lesion was excavated using a slow rotating round bur. The area was well irrigated, acid etched and restored using resin modified glass ionomer cement (Gc Gold Label 2 Lc). The surface was polished using carbide burs to smoothen and make it non plaque retentive (fig 3).

The donor site was prepared for harvesting connective tissue graft, i.e. premolar region of the palate. The graft was harvested using the dou-

ble incision, trap door method of harvesting connective tissue graft.<sup>7</sup> Under local anaesthesia, using 15C BP blade, two vertical incisions were given perpendicular to the gingival margin at premolar region which were joined by a horizontal incision. The partial thickness flap was reflected and the graft was harvested with the epithelial collar (fig 4). The palatal flap was sutured back using 5-0 black silk and the site was covered using a custom made acrylic stent.

The graft was trimmed, adapted and sutured on to the recipient site using 5-0 vicryl sutures (fig 5). The partial thickness flap at the recipient site was sutured using 5-0 black silk (fig 6). The recipient site was covered by periodontal pack.



Figure 1: Preoperative view showing carious and non carious cervical lesion in relation to #34 and #33 respectively



Figure 2: Flap reflected to expose the lesions



Figure 3: Restoration done with Resin modified GIC



Figure 4: Connective tissue graft harvested



Figure 5: Graft sutured on donor site



Figure 6: Graft covered with flap

For post surgical care patient was prescribed systemic antibiotics and analgesics for seven days and 0.2% Chlorhexidine rinse twice daily. Sutures were removed after fourteen days (fig 7). Normal oral hygiene measures were resumed after four weeks. Patient was recalled every week for first two months and once in a month till one year of postoperative period. At the end of eight weeks, when the soft tissue healing was almost complete (fig 8), the coronal aspect of resin modified GIC was removed and replaced with tooth colour matching composite (3m EspeFiltek Z350 Xt Restorative Syringe) (fig 9). Figure 10 shows stable clinical results at 6 month post operative follow up visit. There was complete root coverage as well as 3mm increase in the width of keratinised gingiva.

## DISCUSSION

Gingival recession is a lesion with multi factorial etiology. The denuded root surface is a major cause of concern as it may result in dentinal hypersensitivity, pain, root caries and cervical abrasion<sup>1</sup>. The exposed cementum is vulnerable to caries and NCCL. In the present case report the recession associated with cervi-

cal caries and cervical abrasion were successfully managed using a periodontics-restorative approach.

Sub epithelial connective tissue grafting, remains the gold standard for periodontal plastic and esthetic surgeries. The graft survives and integrates into the donor site on the principle of dual blood supply, i.e., blood supply derived from underlying connective tissue bed as well as the overlying partial thickness flap.<sup>8</sup> As a result, it makes this procedure the most predictable for improving the soft tissue parameters as well as esthetically acceptable.

In the present case report, the choice of graft was sub epithelial connective tissue graft, as it not only covered the denuded root but also resulted in increasing the width and thickness of keratinised tissue (table-1). Adequate width and thickness of keratinised tissue, acts as a mechanical barrier as well as halts further progression of recession. Resin modified GIC was the restorative material of choice, as it is highly biocompatible with the subgingival environment.<sup>9</sup> Coronal portion of the GIC was removed and replaced with composite restoration for its better tooth matching ability. The final outcome was complete restoration of form, func-



Figure 7:  
Two weeks post operative



Figure 8:  
Two month post operative



Figure 9:  
Composite restoration done



Figure 10:  
Six months post operative

tion and esthetics of the hard tissue, as well as soft tissue. Establishment of adequate zone of keratinised gingiva enabled the patient to maintain good oral hygiene during the entire six months follow up period.

## CONCLUSION

A multidisciplinary approach can provide better clinical results and emergence profile in gingival recession. Considering root exposure co-existing with factors like carious and non carious cervical lesions, a periodontics-restorative interdisciplinary approach helped in successfully managing the teeth involved with gingival recession, showing stable clinical results at the end of six months period.

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